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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/765,879	01/18/2001	Brian Keith Schmidt	0007056-0058/P5318/BBC	9293

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EXAMINER

NGUYEN, QUANG N

ART UNIT	PAPER NUMBER
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2141

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/765,879

Applicant(s)

SCHMIDT, BRIAN KEITH

Examiner

Quang N. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7-10, 14-17 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-10, 14-17 and 21-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/13/2006 has been entered.

Claims 1-2, 8-9 and 15-16 have been amended. Claims 1-3, 7-10, 14-17 and 21-26 are presented for examination.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. **Claim 15 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

4. As to claim 15, "a computer usable medium having computer readable code embodied therein configured to provide a virtual namespace for a compute capsule, said computer program product comprising:" is nonstatutory because it is not limited to

tangible embodiments. In view of Applicant's disclosure on page 25, line 11-12, the computer 1200 may obtain application code in the form of "carrier-wave". As such, the claim is not limited to statutory subject matter and is therefore nonstatutory.

To overcome this type of 101 rejection, Examiner respectfully suggests Applicants to amend the claim to include computer readable storage media/medium to store computer instructions executable by a computer processor to perform the steps of (for example, the claim should be amended as "a computer-readable storage medium having computer readable codes embodied therein configured to provide a virtual namespace for a compute capsule, said computer program product comprising:"). See MPEP 2105, section IV. -- DETERMINE WHETHER THE CLAIMED INVENTION COMPLIES WITH 35 U.S.C. 101 – under subsection 1. Nonstatutory subject matter.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-3, 7-10, 14-17 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hipp (US 6,848,106), in view of VMware ("Technical White Paper" – February 1999).**

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7. As to claim 1, Hipp teaches a method for providing a virtual namespace for a compute capsule, comprising:

assigning a virtual token to a resource (*assigning a virtual resource ID "RID" to a system resource*) within said compute capsule, said resource being of an underlying machine and capable of being named by said compute capsule (*if a resource is marked for copy-on-write, then a reference to the original underlying object is kept*) (Hipp, C9:L34 – C10:L47);

interposing a name translator (*the virtual resource translation table 502*) between said resource and said compute capsule (Hipp, C10: L39-47 and C11: L8-14);

binding said resource to said virtual token with a name translation table persistently stored within said compute capsule (*a translation unit maps the system RID's to the virtual RID's by storing and fetching translation information in the appropriate translation table 502 persistently stored in non-volatile storage*) (Hipp, C4: L16-21, C10: L39-47 and C11: L8-29); and

translating said virtual token into said resource using said name translator, if the compute capsule names said resource (*the application snapshot/restore framework 200 looks up the translation for application ID "AID" and "RID" in the virtual resource translation table 502, which returns resource "s"*) (Hipp, C11: L30-42), wherein the translating is transparent to both an operating system and any application running on the underlying machine (*the application snapshot/restore framework 200 is transparent to running and snapshotted applications*) (Hipp, C3: L42-58).

However, Hipp does not explicitly teach said compute capsule being configured to provide an encapsulated form that is capable of being moved between computers, associated with different physical devices, without restriction.

In an analogous art, VMware teaches VMware Virtual Platform, a thin software layer that allows virtual machines with multiple operating system environments to work in concert with each other sharing files and devices, wherein VMware Virtual Platform can encapsulate a virtual machine and enable it to be moved freely among different physical machines/computers (VMware, pages 1-2).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teaching of Hipp to provide an encapsulated form that is independent of the environment of a host system. One would have been motivated to do so to support the integration of multiple environments of host systems so that these environments could perform like multiple applications on a single computer (VMware, page 1, paragraph 3), i.e., to allow computer applications being ported/transferred across computer networks to different processing locations without incurring costly processing overhead (Hipp, C1: L60-63).

8. As to claim 2, Hipp-VMware teaches the method of claim 1, wherein said name translation table provides transparent mobility of a computing environment by being mapped to new machine-local values if said compute capsule is moved to another host (*the application snapshot/restore framework 200 is transparent to running and snapshotted applications*) (Hipp, C3: L42-58).

9. As to claim 3, Hipp-VMware teaches the method of claim 1, wherein said virtual token is only identifiable from within said compute capsule (*only the virtual RID is visible to the application*) (Hipp, C9:L66 – C10:L16).

10. As to claim 7, Hipp-VMware teaches the method of claim 1, further comprising: controlling access to said compute capsule (*for every resource included in the snapshot virtual template, rules for the resource and access type are looked up, i.e., controlling access via an access list or rules list*) (Hipp, C9: L24-29).

11. Claims 8-10 and 14 are corresponding virtual namespace claims of method claims 1-3 and 7; therefore, they are rejected under the same rationale.

12. Claims 15-17 and 21 are corresponding computer program product claims of method claims 1-3 and 7; therefore, they are rejected under the same rationale.

13. As to claims 22-23, Hipp-VMware teaches the method of claim 1, wherein said compute capsule encapsulates an active computing environment including one or more processes and state information (*an application snapshot may consist of multiple processes and multiple threads and include shared resources in use by a process*) that allows said compute capsule to be suspended and revived on a binary compatible machine (*a process may be snapshotted and restored more than once and snapshot virtual templates are node-independent*) (Hipp, C3: L45-58 and C7: L63).

14. As to claim 24, Hipp-VMware teaches the method of claim 1, wherein said resource is defined by one or more of a file, a processor, a memory, and an attached device (data is loosely defined to mean any system resource such as memory, files, sockets, handles, etc.) (Hipp, C6: L58-65).

15. As to claim 25, Hipp-VMware teaches the method of claim 1, wherein said compute capsule is configured to communicate with processes outside said compute capsule through Internet sockets and globally shared files (*VMware Virtual Platform emulates an Ethernet card to allow virtual machines to share files, printers and machines connected to the LAN or the Internet*) (VMware, page 6, paragraph 6).

16. As to claim 26, Hipp-VMware teaches the method of claim 1, wherein said compute capsule is configured to provide an encapsulated form that is independent of configuration settings of a host system (*VMware Virtual Platform can run multiple operating systems and their respective applications concurrently, without restrictions; and encapsulate an entire computing environment and move it freely among different physical computers, i.e., independent of environment/configuration settings of a host system*) (VMware, pages 1-2).

Response to Arguments

17. In the remarks, Applicant argued in substance that

(A) Prior Art does not disclose or suggest the translation table being persistently stored within a compute capsule.

As to point (A), **Hipp** teaches application states are tracked using a preload library 204, which is an application library that interposes upon an application for the express purpose of intercepting and handling library calls and system calls, wherein a translation unit maps the system RID's to the virtual RID's by storing and fetching translation information in the appropriate translation table 502. Hipp also teaches the preload library can save the state of various resources by intercepting API interface calls and then saves the state at a pre-arranged memory location. When the process' memory is saved as part of the snapshot/restore mechanism, this state is saved since it resides in memory and the state as it is modified is saved to non-volatile storage (*i.e., the state of various resources is saved at a pre-arranged memory location such as the appropriate translation table 502 in a non-volatile storage*) (**Hipp, C4: L1-21, C10: L39-47 and C11: L8-29**).

(B) There is not a suggestion to combine references.

As to point (B), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, **Hipp** teaches a method and system for effecting a transfer of applications across computer networks to different processing locations without incurring costly processing overhead by making snapshot image of a running application including data and state information, and restoring a running application from the snapshot image using a translation unit that maps the system RID's to the virtual RID's by storing and fetching translation information in the appropriate translation table (**Hipp, C1: L22-25 and C11: L8-10**).

In an analogous art, **VMware** teaches a VMware Virtual Platform supports the integration of multiple environments so that these environments perform like multiple applications on a single computer, wherein the VMware Virtual Platform can encapsulate a virtual machine and enable it to be moved freely among different physical machines (**VMware, pages 1-2**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of **Hipp** and **VMware**. One would have been motivated to do so to support the integration of multiple environments of host systems so that these environments could perform like multiple applications on a single computer (**VMware, page 1, paragraph 3**), i.e., to allow computer applications being ported/transferred across computer networks to different processing locations without incurring costly processing overhead (**Hipp, C1: L60-63**).

18. Applicant's arguments as well as request for reconsideration filed on 02/13/2006 have been fully considered but they are not deemed to be persuasive.

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19. A shortened statutory period for reply to this action is set to expire THREE (3) months from the mailing date of this communication. See 37 CFR 1.134.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang N. Nguyen whose telephone number is (571) 272-3886.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's SPE, Rupal Dharia, can be reached at (571) 272-3880. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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SUPERVISORY PATENT EXAMINER